VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a major, municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards 9 VAC 25-260-10 et.seq. The discharge is a result of the operation of a municipal wastewater treatment plant treating sewage originating from a residential population and commercial businesses. This permit action includes revised effluent limitations and special conditions in the permit.

1. Facility Name: Lawrenceville Wastewater Treatment Plant (WWTP)
Location: 380 Meadow Lane
Lawrenceville, VA 23868

Facility Owner: Town of Lawrenceville
Owner Contact: C.J. Dean
Title: Town Manager
Mailing Address: 400 North Main Street
Lawrenceville, VA 23868
Telephone: (434) 848-2414
Email: cjdean@lawrencevilleweb.com

Facility Operator: Robert Williams
Telephone: (434) 848-2729
Email: wwtp@lawrencevilleweb.com

2. SIC Code: 4952

3. Permit No. VA0020354 Permit Expiration Date: September 10, 2012

4. Application Complete Date: Date: April 10, 2012

Permit Drafted By: Jeremy Kazio Date: May 11, 2012

DEQ Regional Office: Piedmont Regional Office

Reviewed By: Tamira Cohen Date: May 23, 2012
Curt Linderman Date: June 7, 2012, June 12, 2012
Kyle Winter Date: June 15, 2012
EPA Region III Date:

5. Receiving Stream:

Name:	Roses Creek
River Mile:	5ARSE000.28
Basin:	Chowan and Dismal Swamp
Subbasin:	Chowan River
Section:	3
Class:	III
Special Standards:	None

7-Day, 10-Year Low Flow (7Q10):	0.372 MGD
1-Day, 10-Year Low Flow (1Q10):	0.317 MGD
30-Day, 5-Year Low Flow (30Q5):	0.973 MGD
30-Day, 10-Year Low Flow (30Q10):	0.626 MGD
7Q10 High Flow:	3.42 MGD
1Q10 High Flow:	2.62 MGD
30Q10 High Flow:	5.17 MGD
Harmonic Mean Flow (HM):	3.88 MGD

Tidal? NO On 303(d) list? YES

Please see **Attachment A** for the Flow Frequency Memo by DEQ Water Planning Staff

6. Operator License Requirements: Class II
The recommended attendance hours by a licensed operator and the minimum daily hours that the treatment works should be manned by operating staff are contained in the Sewage Collection and Treatment Regulations (SCAT) 9 VAC 25-790-300.

7. Reliability Class: Class II
Reliability is a measurement of the ability of a component or system to perform its designated function without failure or interruption of service. The reliability classification is based on the water quality and public health consequences of a component or system failure. The permittee is required to maintain Class II Reliability for this facility.

8. Permit Characterization:

( ) Issuance	(X) Existing Discharge
(X) Reissuance	( ) Proposed Discharge
( ) Revoke & Reissue	(X) Effluent Limited
( ) Owner Modification	(X) Water Quality Limited
( ) Board Modification	(X) WET Limit
( ) Change of Ownership/Name	( ) Interim Limits in Permit
Effective Date:	( ) Interim Limits in Other Document (attached)
(X) Municipal	( ) Compliance Schedule Required
SIC Code(s): 4952	( ) Site Specific WQ Criteria
( ) Industrial	( ) Variance to WQ Standards
SIC Code(s):	( ) Water Effects Ratio
(X) POTW	(X) Discharge to 303(d) Listed Segment
( ) PVOTW	( ) Toxics Management Program Required
( ) Private	( ) Toxics Reduction Evaluation
( ) Federal	( ) Possible Interstate Effect
( ) State	( ) Storm Water Management Plan

9. Wastewater Flow and Treatment:

Table 1: Wastewater Flow and Treatment

Outfall Number	Wastewater Source	Treatment	Design Flow
001	Residential and commercial (residential population = ~4,600)	Screening, grit removal, primary settling, oxidation ditches, UV disinfection, post step aeration. See Item 10 for sludge handling and disposal.	1.2 MGD

Please see **Attachment B** for topographic map, aerial photo, and facility flow diagram**.**

10 Sludge Disposal: Sludge processing consists of two aerobic digesters followed by chemical dewatering. Dewatered sludge is hauled to the Brunswick Waste Management Facility (WMF) landfill, located at 107 Mallard Crossing Road, Lawrenceville VA, any time between 8 a.m. and 2 p.m. Monday through Friday by the permittee. See **Attachment C** for sludge process diagram and description, and a topographic map of the route taken by the sludge hauler from Lawrenceville WWTP to the Brunswick WMF.

11. Discharge Location Description: The Town of Lawrenceville WWTP discharges to Roses Creek in Brunswick County. The outfall is located at rivermile 5ARSE000.28.

Name of USGS topo map: Powelton– 9A (See **Attachment B**)

12. Material Storage: Soda ash is stored on site in 50-pound bags (approximately 15 at any time) in an enclosed shed. A small volume of muriatic acid used for cleaning ultraviolet (UV) light bulb casings is stored inside the UV building. Sealed polyethylene drums of polymer are stored under roof in the bio-solids truck loading area. Gasoline and oil for lawn mowers are stored in a fire-proof cabinet in the same shed as the machinery. Used machinery oil is stored in an enclosed container and kept under roof until removed periodically by a recycler.

13. Ambient Water Quality Information: Ambient water quality information was derived from data obtained from monitoring station 5ARSE001.22. Monitoring station 5ARSE001.22 is located on Roses Creek at the Route 678 bridge and is approximately 1 mile upstream of the discharge (see **Attachment D** for ambient monitoring data).

14. Antidegradation Review and Comments: Tier 1 __X___ Tier 2 _____ Tier 3 _____
The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect those uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

    The antidegradation review begins with a Tier determination. Roses Creek has historically been considered a Tier 1 water and antidegradation was not applied during the 1979 and 1996 modeling efforts. Both models indicate dissolved oxygen levels will fall to or below 5.0 mg/L during critical conditions (see **Attachment A** for Flow Frequency Analysis by J.Palmore, P.G., dated April 12, 2012).

15. Site Inspection: By Charles Stitzer on January 5, 2011. (See **Attachment E**)

16. Effluent Limitation Development:

(continued on next page . . .)

Table 2 –Basis for 2012 Permit Limitations

EFFLUENT CHARACTERISTICS		BASIS FOR LIMITS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
			MONTHLY AVERAGE		WEEKLY AVERAGE		MIN	MAX	FREQUENCY	SAMPLE TYPE
Flow (MGD)		NA	NL		NA		NA	NL	Continuous	Totalizing, Indicating, and Recording
pH		1,3	NA		NA		6.0 SU	9.0 SU	1 per Day	Grab
$cBOD_5$	Jan - Apr	2	20 mg/L	91 kg/d	30 mg/L	140 kg/d	NA	NA	2 Days per Week	24 Hour Composite
	May - Dec		10 mg/L	45 kg/d	15 mg/L	68 kg/d	NA	NA	2 Days per Week	24 Hour Composite
Total Suspended Solids (TSS)		4	20 mg/L	91 kg/d	30 mg/L	140 kg/d	NA	NA	1 per Month	24 Hour Composite
Ammonia as N	Jan - Apr	1,4	13.5 mg/L		13.5 mg/L		NA	NA	1 per Month	24 Hour Composite
Total Kjeldahl Nitrogen (TKN)	May - Dec	2	3.0 mg/L	14 kg/d	4.5 mg/L	20 kg/d	NA	NA	2 Days per Week	24 Hour Composite
Dissolved Oxygen (DO)	Jan - Apr	2	NA		NA		5.0 mg/L	NA	1 per Day	Grab
	May - Dec		NA		NA		6.5 mg/L	NA	1 per Day	
E.coli		1	126 N / 100 mL (Geometric Mean)		NA		NA	NL	5 Days per Week (between 10am and 4pm)	Grab
Zinc, Total Recoverable		1	61 µg/L		61 µg/L		NA	NA	1 per Three Months	Grab
Chronic 7-Day Static Renewal Survival and Growth Test: [*Pimephales promelas*]		4	NA		NA		NA	TUc=1.9	1 per Three Months	24 Hour Composite

1. Water Quality Standards (9 VAC 25-260)
2. Water Quality Based (April 25, 1996 Water Model Memo by Jon van Soestbergen, P.E.)
3. Federal Effluent Guidelines (40 CFR 133.102)
4. Best Engineering Judgment

pH: A pH limitation of 6.0 to 9.0 standard units is assigned to all discharges into Class III Nontidal Waters in accordance with the Water Quality Standards, 9 VAC 25-260-50, and Federal secondary treatment standard guidelines.

$cBOD_5$, TKN, and DO: These effluent limitations, including seasonal variations, are based on the recommended limitations in the April 25, 1996 memorandum by Jon van Soestbergen, P.E. titled *Recommended Effluent Limits for Lawrenceville STP (VA0020354)*. The memorandum is the result of a modeling effort that was originally conducted for Roses Creek in April 1996 due to Lawrenceville's request to expand the design flow of the WWTP from 0.6 MGD to the current design flow of 1.2 MGD. The original modeling effort was memorialized in an April 11, 1996 memo by Jon van Soestbergen, P.E in which both the Lawrenceville WWTP and Alberta Sewage Treatment Plant (STP) were included. This original model was later revised to exclude the Alberta STP in the April 25, 1996 memo, which did not change the original recommended limitations (See **Attachment D** for referenced memoranda and associated stream models).

TSS: In situations where a TSS limitation is not recommended by an applicable stream model, typical Agency practice has been to match the TSS limitation to the most stringent recommended $cBOD_5$ or BOD_5 limitation. This is the case for the 2012 TSS permit limitation, and is also in line with the 2007 and 2002 permit reissuances.

Ammonia as N and Total Recoverable Zinc: If it is feasible that a specific pollutant for which in-stream criteria are given in the *Virginia Water Quality Standards* (9 VAC 25-260 et.seq.) may exist in the facility's effluent, a Reasonable Potential Analysis must be conducted in order to determine if it is statistically probable that the permittee's future discharge may contain that pollutant in concentrations which are harmful to aquatic life and/or human health within the receiving stream. The first step of the analysis is to calculate the pollutant's acute and chronic wasteload allocations (WLAs), which are defined as the pollutant concentration that may be discharged by the facility over specific periods of time which will maintain the in-stream criteria referenced above. The WLAs are determined using a DEQ-sourced Excel spreadsheet called MSTRANTI, which requires inputs representing site specific data for critical flows, dilution, mixing, and water quality for both the receiving stream and the effluent. After the WLAs are calculated, a desktop computer application called STATS is utilized to determine if future pollutant concentrations may exceed the WLAs. The STATS application fits the WLAs, as well as observed effluent data, to separate lognormal distributions. If the projected effluent distribution exceeds either of the projected WLA distributions, then a limitation is deemed necessary. The limitation is equal to the concentration expected to be observed at the proposed limitation monitoring frequency within the most protective WLA distribution.

The inputs required by MSTRANTI for critical ambient water quality for this facility were calculated using data from monitoring station 5ARSE000.28 as indicated in Item 13 of this fact sheet. The effluent inputs were derived from DMRs and data submitted by the permittee for the 2012 permit reissuance (see **Attachment F**).

For Ammonia, GM 00-2011 requires that an expected value of 9.0 mg/L be entered into STATS as effluent data in order to bypass the program's Reasonable Potential Analysis because this pollutant has been established to exist in the final effluent of all municipal wastewater treatment facilities. The resulting annual Ammonia limitations of 3.57 mg/L (monthly average) and 4.52 mg/L (weekly average) were calculated. Considering the accepted concept that Ammonia comprises approximately 40%-60% of TKN, the level of treatment required to meet the existing TKN limitations of 3.0 mg/L and 4.5 mg/L are expected to control the Ammonia concentration in the facility's effluent. Therefore, the calculated Ammonia limitations were not applied to the 2012 permit during the months in which the TKN limitation applies (May - December).

For the months in which the TKN limitation does not apply (January-April), the limitation evaluation for Ammonia was conducted with data representing critical ambient and effluent flows and temperatures for these months only. The high-flow evaluation resulted in the conclusion that a limitation is not necessary to protect the Ammonia water quality criteria during these months. Due to antibacksliding policies, however, the limitation of 13.5 mg/L must be carried forward to the 2012 permit (see **Attachment G** for MSTRANTI and STATS printouts). Please note that the 2007 and 2002 evaluations also concluded that a high-flow Ammonia limitation is not needed, and it is unknown which permit cycle prior to 2002 that the limitation of 13.5 mg/L first appeared.

Also note that an evaluation of ambient stream flows and temperatures confirmed that January-April may still be considered the high flow months for the purposes of the 2012 permit reissuance (see **Attachment D**).

Other pollutants for which one or more data were reported greater than the test method quantitative limit (QL) in the 2012 permit reissuance application are contained in the table below.

Table 3 – Effluent Screening Analysis: Summary and Results

Chemical	Required QL (µg/L)	Test Required by:		Reporting Results by Sample Date				Evaluation Type*	**Limitation Needed?**
				8/10/2010	9/1/2010 & 9/15/2010	1/25/2012	2/8/2012		
		Att. A	Form 2A	RESULT (µg/L)	RESULT (µg/L)	RESULT (µg/L)	RESULT (µg/L)		
Copper, dissolved	0.50	√			1.88	1.4	1.67	1	NO
Nickel, dissolved	0.94	√			0.74	<0.50	0.50	1,2	NO
Zinc, dissolved	2.0	√			23.8	30.2	31.1	1,2	YES
Copper, total recoverable	--		√	7.39				NA	NO
Lead, total recoverable	--		√	0.56				1	NO
Nickel, total recoverable	--		√	0.98				2	NO
Zinc, total recoverable	--		√	27.6				2	NO
Nitrate as N	--	√	√		790	1120	1280	3	NO
Total Dissolved Solids	--		√		223000	219000	199000	3	NO
Total Kjeldahl Nitrogen	--	√	√		930	680	1330	3	NO
Total Phosphorus	--		√		280	<200	210	3	NO
Oil & Grease HEM	--		√		6400	<5000	<5000	3	NO

* Evaluation Type:

1 - Water Quality Standards: Aquatic Life (MSTRANTI & STATS)
2 - Water Quality Standards: Human Health (Direct comparison)
3 - No applicable comparison values

The MSTRANTI and STATS printouts for the aquatic life analyses above may be found in **Attachment G**. The aquatic life analyses resulted in the need for a Zinc limitation of 61 µg/L, which is more stringent than the 2007 Zinc limit of 75 µg/L. This more stringent limitation is the result of a lower average hardness value used for the 2012 WLA calculations. Review of Zinc compliance data submitted between 2002 – 2011 (see **Attachment F**) and those data submitted with the 2012 permit application, indicates that the permittee will be able to comply with the more stringent permit limitation without the need for a compliance schedule.

Human health direct comparisons are contained in the table below. Please note that this facility does not discharge to receiving waters that are considered to be a public water supply. Therefore, only those applicable criteria contained 9 VAC 25-260-140 of the Water Quality Standards under the column “Human Health: All Other Surface Waters” were used for the Human Health Criteria evaluation. Results of the human health evaluations indicated that all data points submitted by the permittee for the 2012 application were below the human health criteria, and therefore human health limitations for the parameters in the table below are not necessary.

Table 4 – Human Health Criteria Evaluation

Chemical	Reporting Results by Sample Date				Non-PWS Human Health Criteria (µg/L)	**Limitation Needed?**
	8/10/2010	9/1/2010 & 9/15/2010	1/25/2012	2/8/2012		
	RESULT (µg/L)	RESULT (µg/L)	RESULT (µg/L)	RESULT (µg/L)		
Nickel, dissolved		0.74	<0.50	0.50	4,600	NO
Zinc, dissolved		23.8	30.2	31.1	26,000	NO
Nickel, total recoverable	0.98				4,600	NO
Zinc, total recoverable	27.6				26,000	NO

E.Coli: The 2012 limitation and monitoring frequency for *E.coli* are expected to protect the primary contact recreation use bacteria criteria outlined in 9 VAC 25-260-170 (Water Quality Standards). The primary contact recreation bacterial in-stream criteria for protection of freshwater is 126 N/100 mL colony forming units (CFU) of *E.coli* bacteria based on a monthly geometric mean resulting from *at least* 4 weekly samples. This limitation is also in compliance with the WLA of 4.18E+12 cfu/year assigned to the Lawrenceville WWTP in the Roses Creek Bacterial TMDL as discussed in Item 25 of this fact sheet (see equation below for annual bacteria load expected for this facility).

$$\frac{126\ cfu}{100\ mL} \times \frac{1{,}000\ mL}{1\ L} \times \frac{3.785\ L}{1\ gal} \times \frac{1{,}200{,}000\ gal}{1\ day} \times \frac{365\ days}{1\ year} = 2.09 \times 10^{12}\ cfu/year$$

Chronic 7-Day Static Renewal Survival and Growth Test: [Pimephales promelas]: The Whole Effluent Toxicity (WET) limitation and monitoring requirement calculated for the 2012 permit is the same as that of the 2007 permit. An evaluation was conducted using the DEQ derived Excel spreadsheet WETLIM10 in order to produce a WLAa,c and WLAc from inputted ambient and effluent information. The WLA's and chronic WET monitoring results for *P.promelas* submitted between 1999-2012 were inserted into the STATS program, and the resulting limitation is the same as that derived for the 2007 permit (see **Attachment H** for WET data, WETLIM10, and STATS printouts, as well as guidance from OWP&CA).

17. Basis for Sludge Use & Disposal Requirements: The referenced requirements are applicable to facilities which land apply sludge; however, this facility does not land apply sludge.

18. Antibacksliding: All limitations in the 2012 permit reissuance are the same as or more stringent than the limitations in the 2007 permit reissuance. Please note that, for the 2012 permit the $cBOD_5$ and TSS loading limitations are expressed as 91 kg/d rather than the previous 90 kg/d due to implementation of rounding procedures described in GM06-2016. Since this a change to the expression of the limitations rather than the limitations themselves, antibacksliding policies are maintained.

19. Special Conditions:

Part I.B. – Whole Effluent Toxicity (WET) Testing:
Rationale: VPDES Permit Regulation, 9 VAC 25-31-210 and 220 I, requires monitoring in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act.

Part I.C

a. Special Condition C.1 – 95% Capacity Reopener

Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B 4 for all POTW and PVOTW permits.

b. Special Condition C.2—Indirect Dischargers
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B.1 & B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

c. Special Condition C.3 – CTC, CTO Requirement
Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790-50.

d. Special Condition C.4 – Operations and Maintenance Manual Requirement
Rationale: Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190 E.

e. Special Condition C.5 – Licensed Operator Requirement
Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 C and the Code of Virginia § 54.1-2300 et seq., Rules and Regulations for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals (18 VAC 160-20-10 et seq.), require licensure of operators.

f. Special Condition C.6. – Reliability Class
Rationale: Required by Sewage Collection and Treatment Regulations, 9 VAC 25-790 for all municipal facilities.

g. Special Condition C.7. – Sludge Reopener
Rationale: Required by VPDES Permit Regulation 9 VAC 25-31-220 C for all permits issued to treatment works treating domestic sewage.

h. Special Condition C.8 – Total Maximum Daily Load (TMDL) Reopener
Rationale: Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.

i. Special Condition C.9 – Compliance Reporting
Rationale: Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limitation or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

j. Special Condition C.10 – Sludge Use and Disposal
Rationale: VPDES Permit Regulation, 9 VAC 25-31-100 P; 220 B 2, and 420 through 720; and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.

k. Special Condition C.11 – Materials Handling and Storage
Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

l. Special Condition C.12 - Treatment Works Closure Plan

Rationale: §62.1-44.19 of the State Water Control Law. This condition establishes the requirement to submit a closure plan for the wastewater treatment facility if the treatment facility is being replaced or is expected to close.

m. Special Condition C.13 – Effluent Monitoring Frequencies
Rationale: Permittees are granted a reduction in monitoring frequency based on a history of permit compliance. To remain eligible for the reduction, the permittee should not have violations related to the effluent limits for which reduced frequencies were granted. If permittees fail to maintain the previous level of performance, the baseline monitoring frequencies should be reinstated for those parameters that were previously granted a monitoring frequency reduction.

n. Special Condition C.14 - Pretreatment
Rationale: VPDES Permit Regulation, 9VAC25-31-730 through 900, and 40 CFR Part 403 require certain existing and new sources of pollution to meet specified regulations.

20. Part II, Conditions Applicable to All VPDES Permits
The VPDES Permit Regulation at 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

21. Changes to 2007 Permit: The tables on the following pages represent a summary of the limitations and monitoring requirements changes from the 2007 permit to the 2012 permit reissuance.

(continued on next page . . .)

Table 5: Changes to Limitations and Monitoring (Part I.A.)

EFFLUENT CHARACTERISTICS		DISCHARGE LIMITATIONS										MONITORING REQUIREMENTS				REASON FOR CHANGE
		MONTHLY AVERAGE				WEEKLY AVERAGE				MINIMUM		MAXIMUM		FREQUENCY		SAMPLE TYPE		
		From		To		From		To		From	To	From	To	From	To	From	To	
Flow (MGD)		NL		No Change		NA		No Change		NA	No Change	NL	No Change	Continuous	No Change	Totalizing, Indicating, and Recording	No Change	No Changes
pH		NA		No Change		NA		No Change		6.0 SU	No Change	9.0 SU	No Change	1/Day	1 per Day	Grab	No Change	Expression of monitoring frequency changed according to regional preference.
$cBOD_5$	Jan-Apr	20 mg/L	90 kg/d	No Change	91 kg/d	30 mg/L	140 kg/d	No Change	No Change	NA	No Change	NA	No Change	1/Week	2 Days per Week	24 HC	24 Hour Composite	Expression of monthly loading limit revised to reflect proper rounding conventions. Monitoring frequency changed to reflect monitoring reduction analysis. Expression of monitoring frequency and sample type changed according to regional preference.
	May-Dec	10 mg/L	45 kg/d	No Change	No Change	15 mg/L	68 kg/d	No Change	No Change	NA	No Change	NA	No Change	1/Week	2 Days per Week	24 HC	24 Hour Composite	
Total Suspended Solids (TSS)		20 mg/L	90 kg/d	No Change	91 kg/d	30 mg/L	140 kg/d	No Change	No Change	NA	No Change	NA	No Change	1/Month	1 per Month	24 HC	24 Hour Composite	
Ammonia as N	Jan-Apr	13.5 mg/L		No Change		NA		13.5 mg/L		NA	No Change	13.5 mg/L	Removed	1/Month	1 per Month	Grab	24 Hour Composite	Maximum limitation changed to weekly limitation in accordance with GM00-2011 (Pg. 70). Expression of monitoring frequency changed according to regional preference. 24 Hour composite sampling required in accordance with GM10-2003 (MN-2, Pg.2)
Total Kjeldahl Nitrogen (TKN)	May-Dec	3.0 mg/L	14 kg/d	No Change	No Change	4.5 mg/L	20 kg/d	No Change	No Change	NA	No Change	NA	No Change	3D/Week	2 Days per Week	24 HC	24 Hour Composite	Monitoring frequency changed to reflect monitoring reduction analysis. Expressions of monitoring frequency and sample type changed according to regional preference.
Dissolved Oxygen (DO)	Jan-Apr	NA		No Change		NA		No Change		5.0 mg/L	No Change	NA	No Change	1/Day	1 per Day	Grab	No Change	Expression of monitoring frequency changed according to regional preference.
	May-Dec	NA		No Change		NA		No Change		6.5 mg/L	No Change	NA	No Change	1/Day	1 per Day	Grab	No Change	
E.Coli		126 N / 100 mL (Geometric Mean)		No Change		NA		No Change		NA	No Change	NL	No Change	5D/Week 10 a.m.-4 p.m.	5 Days per Week (between 10 am and 4 pm)	Grab	No Change	Expression of monitoring frequency changed according to regional preference. Please note that this limitation replaces the 2007 permit's fecal coliform limitation. Please see Table 6 of this fact sheet for further information.
Zinc, Total Recoverable		0.075 mg/L		61 µg/L		0.075 mg/L		61 µg/L		NA	No Change	NA	No Change	1/6 Months	1 per Three Months	Grab	No Change	See Item 16 of this fact sheet for information regarding the new Zinc limitation. Monitoring frequency changed to reflect monitoring reduction analysis. Expression of monitoring frequency changed according to regional preference. Limitation changed to be expressed in micrograms per liter for clarity purposes.
Chronic 7-Day Static Renewal Survival and Growth Test: [*Pimephales promelas*]		NA		No Change		NA		No Change		NA	No Change	1.9 TUc		1/ 3 Months	1 per Three Months	24 HC	24 Hour Composite	Expressions of monitoring frequency and sample type changed according to regional preference.

Table 6: Other Changes to 2007 Permit

From	To	Permit Section Changed	Reason for Change	Date
Part I.A.1	Part I.A.1	Authorization statement	Language revised to reflect GM10-2003 (MN-1, Pg 15).	
Part I.A.1 **	Part I.A.1(a)	Design flow footnote	95% Capacity Reopener reference added for clarity.	4/12
Part I.A.1 *	Part I.A.1(b)	Significant figures footnote	"Digits" replaced with "figures" to match vocabulary used in GM06-2016.	
Part I.A.1 ‡	Part I.A.1(c)	WET Requirements	Revised to remove compliance schedule reference ,and to address change in permit structure.	
Part I.A.2	Part I.A.2	No discharge floating solids/foam	No Change	
--	Part I.A.3	85% removal BOD_5 & TSS	New, added in accordance with GM10-2003 (MN-1, Pg. 15) and Federal Effluent Guidelines.	
Part 1.A.3	Part I.A.4	Sample location	Changed required compliance point for final effluent from 'Outfall 001' to 'after post aeration' due to Outfall 001 being partially submerged in Roses Creek during high flow events.	
--	Part I.A.5	Monitoring frequency schedule	New, added to clarify monitoring and reporting schedule for frequencies less than once per month.	
Part I.B.2	Part I.B	Whole Effluent Toxicity Requirements	Compliance schedule and additional chronic monitoring for C.dubia removed. Language revised in accordance with recommendations from OWP&CA.	
Part I.C.1	Part I.C.1	95% Capacity Notification	No Change	
Part I.C.2	Part I.C.2	Indirect Dischargers	Structure changed to match agency boilerplate contained in GM10-2003 (MN-3, Pg.4)	
Part I.C.3	Part I.C.3	CTC, CTO Requirement	Revised wording to reflect GM10-2003 (MN-3, Pg.4)	
Part I.C.4	Part I.C.4	O & M Manual	Revised to reflect 4/3/2012 boilerplate developed by OWP&CA.	
Part I.C.5	Part I.C.5	Licensed Operator	Revised to reflect Board name change in DPOR regulations.	
Part I.C.6	Part I.C.6	Reliability Class	No Change	
Part I.C.7	Part I.C.7	Sludge Reopener	No Change	
Part I.C.8	Part I.C.8	TMDL Reopener	No Change	
Part I.C.9	Part I.C.9	Compliance Reporting	Revised to reflect current agency guidance (GM10-2003, MN-3,Pg.14). Language further revised according to regional procedure and for clarity purposes. $cBOD_5$ QL revised from 5 mg/L to 2 mg/L for consistency with recently adopted VPDES General Permit regulations. QL for Zinc revised to reflect current target value in accordance with agency guidance.	
Part I.C.10	Part I.C.10	Sludge Use and Disposal	Revised to remove reference to the Virginia Department of Health in accordance with GM10-2003 (MN-3, Pg.16)	
Part I.C.12	Part I.C.11	Materials Handling/Storage	Revised to reflect current agency boilerplate contained in GM10-2003 (IN-3, Pg.6).	
--	Part I.C.12	Treatment Works Closure Plan	New, reflects SCAT regulations requirements (9 VAC 25-790-120 E.)	
Part I.C.13	Part I.C.13	Effluent Monitoring Frequencies	Wording and structure enhanced for clarity.	
Part I.C.11	Part I.C.14	Pretreatment	Language revised in accordance with regional preference.	
--	Part II.A.4	VELAP requirements	New, incorporated to reflect change in laboratory accreditation requirementsand in accordance with GM10-2003	
Part I.B.1	Removed	E.coli Compliance Schedule / Demonstration Study	The permittee successfully completed the E.coli demonstration study, and consequently, the E.coli limitation replaced the former Fecal Coliform limitation on April 15, 2008.	

From	To	Permit Section Changed	Reason for Change	Date
Part I.C.14	Removed	Water Quality Criteria Monitoring	This special condition was exclusive to the 2007 permit cycle and no longer applies.	
Expiration date of permit has been shortened from an exact 5 year expiration in order for the next permit term to begin with a complete calendar month. The structure and language of the cover page have been slightly modified in accordance with new agency procedures and for streamlining purposes. Facility name changed to remove 'STP' and replace with "Wastewater Treatment Plant (WWTP)" to match 2012 permit application. Facility location address revised to include city, state, and zip code. Outfall number added to cover page. Signatory changed to reflect Deputy Regional Director.				

22. Variances/Alternate Limits or Conditions: None.

23. Regulation of Users: 9VAC25-31-280 B 9: There are no industrial users contributing to the treatment works. During the 2007 permit cycle, a significant industrial user was identified by the permittee as discharging to the permittee's conveyance system, and the user was consequently placed into DEQ's pretreatment inspection program. However, in 2009 the user disconnected from the system, and an inspection was performed by DEQ staff (accompanied by the permittee) on January 28, 2010 which confirmed that the user no longer had the capability to discharge to the conveyance system.

24. Public Notice Information required by 9 VAC 25-31-280 B:

Comment period: Start Date: TBD End Date: TBD
Published Dates: TBD
Name of Newpaper: *Brunswick Times Gazette*

All pertinent information is on file and may be inspected or copied by contacting Jeremy Kazio at:

Virginia Department of Environmental Quality (DEQ)
Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060-6296

Telephone Number 804/527-5044
Facsimile Number 804/527-5106
Email Jeremy.Kazio@deq.virginia.gov

DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment.

25. 303(d) Impaired Waters / Total Maximum Daily Load (TMDL):

During the 2010 305(b)/303(d) Integrated Water Quality Assessment, Roses Creek from the Alberta STP to its mouth was considered a Category 4A waterbody ("Impaired or threatened for one or more designated uses but does not require a TMDL because the TMDL for specific

pollutant(s) is complete and US EPA approved.") The Recreation Use was impaired due to E. coli exceedances. The Aquatic Life Use and Wildlife Use were assessed as fully supporting. The Fish Consumption Use was not assessed.

The Roses Creek Bacterial TMDL was approved by the EPA on 7/6/2004 and by the SWCB on 12/2/2004. The Town of Lawrenceville WWTP was inadvertently excluded from the original TMDL, but the TMDL was subsequently modified on 7/17/2007 to add the facility. The Lawrenceville WWTP received an E. coli wasteload allocation of 4.18E+12 cfu/year based on the current design flow of 1.2 MGD plus an additional 1.2 MGD of future growth, if needed.

The 2012 permit has a limitation for E.coli of 126 N /100 mL that is in compliance with the Roses Creek Bacterial TMDL (see Item 16 of this fact sheet).

26. Additional Comments:

a. Previous Board Action: None

b. Staff Comments:

- *Monitoring Frequency Reduction*: A monitoring frequency reduction evaluation was conducted for this facility in accordance with GM10-2003 (MN-2, Pg.2). This evaluation is included as part of the DMR data summary in **Attachment F**. Between April 2009 and April 2012 the permittee was issued one Warning Letter dated 10/29/2010 for not transcribing the WET results he submitted with his DMR onto the DMR itself. The permittee promptly resubmitted the DMR with the correct information. Considering that this does not represent an infraction related to the performance of the wastewater treatment plant, it is staff's judgment that monitoring frequency reductions are appropriate for the 2012 permit reissuance.

- *Storm Water Requirements:* This facility is not required to register for coverage under 9 VAC 25-151 General VPDES Permit VAR05 for Discharges of Storm Water Associated with Industrial Activity (Sector T) due the issuance of No Exposure Certification on May 23, 2012. Refer to **Attachment I** for the NEC application, inspection, and approval letter.

- *Financial Assurance*: Financial Assurance obligations do not apply to this facility because it is publicly owned.

- *VDH-Office of Drinking Water:* Coordination with the Virginia Department of Health - Office of Drinking Water indicated that there are no public water supply intakes within 15 miles downstream of the discharge (see **Attachment J**).

- *Department of Game and Inland Fisheries-Threatened/Endangered Species Screening (T&E)*: A T&E species screening was conducted using VDGIF's Fish and Wildlife Information Service for aquatic species. The Green Floater and Atlantic Pigtoe, listed as state threatened and federal species of concern, respectively, were confirmed within a two mile radius of the outfall. Formal coordination with DGIF was initiated on 4/23/2012. A written response was received on June 5, 2012 recommending the following:

  a) That ultraviolet (UV) disinfection be used rather than chlorination,
  b) That DEQ should coordinate with the VA Dept. of Conservation and Resources and the US Fish and Wildlife Service on the 2012 permit action due to the presence of the abovementioned T&E species located within 2 miles of the discharge, and
  c) That EPA's 2009 proposed Ammonia criteria be used to derive the 2012 permit Ammonia limitations.

With regard to DGIF's first comment, this facility already utilizes UV disinfection. In response to the second comment, coordination with DCR and USFWS was initiated on June 6, 2012. For Ammonia, DEQ used the Virginia Water Quality Standards (effective January 6, 2011) adopted by the State Water Control Board and approved by EPA to determine VPDES effluent limitations that are protective of human health and the environment. These standards are updated on a regular basis (triennial review) to incorporate new information applicable to Virginia. The reasonable potential analysis discussed in section 16 above was conducted based on these current Virginia Water Quality Standards. Existing ammonia criteria are established to meet the requirement of 9VAC25-260-20.A that "State waters be free from substances attributable to sewage in concentrations, amounts, or combinations which…are inimical or harmful to human, animal, plant, or aquatic life." DEQ has informed DGIF that their comments concerning EPA 2009 draft ammonia criteria can be properly addressed as part of the Water Quality Standards triennial review process. Following that regular review process, any adopted revisions to the Virginia Water Quality Standards regulation are then included in future permit actions.

The results of this reasonable potential analysis conducted for the reissuance of the existing VPDES Permit concluded that the additional water quality based effluent limitations are not necessary to protect the water quality of the receiving stream. DEQ believes that effluent discharge from this facility meets the requirements of the Water Quality Standards and the VPDES permit regulation and does not violate either the federal Endangered Species Act or the Virginia Endangered Species Act.

- *Planning Concurrence:* The discharge is in conformance with the existing planning documents for the area.

- *EPA Comments*: The draft permit was sent to EPA on ----------.

- *Permit Fees*: The permittee last paid their annual maintenance fee on 9/19/2011 and is considered current.

- *VEEP Status:* The permittee is not a participant in the Virginia Environmental Excellence Program (VEEP).

- *E-DMR Status*: The permittee is currently an e-DMR participant.

- *Chesapeake Bay Nutrients*: The facility is not required to register for coverage under 9 VAC 25-820-10 et seq.- General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia. The facility does not discharge into the Chesapeake Bay Watershed and consequently is not listed in the Chesapeake Bay TMDL.

- *Local Government Notification of Public Notice:* A copy of the public notice for the 2012 permit reissuance was mailed to the Southside Regional Planning District Commission, the Town Manager, and the Town Mayor on ----------. No comments regarding the permit action were received.
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- This permit reissuance is non-controversial. The staff believes that the attached effluent limitations will maintain the Water Quality Standards adopted by the Board.

c. Public Comments: TBD

27. Summary of attachments to this Fact Sheet:

Attachment A	Flow Frequency Memo, Flow Interpolation, 303(d) Fact Sheet
Attachment B	Topographic Map, Aerial Photo, Facility Flow Diagram
Attachment C	Sludge Process Description, Sludge Haul Map
Attachment D	Receiving Stream Information and Stream Model
Attachment E	Facility Inspection Report
Attachment F	Effluent Information
Attachment G	Effluent Screening and Limitation Evaluations
Attachment H	Whole Effluent Toxicity Data and Limitation Evaluation
Attachment I	No Exposure Certification Information
Attachment J	VDH-ODW Concurrence and T&E Coordination
Attachment K	2012 Application Waiver Requests and DEQ Approvals